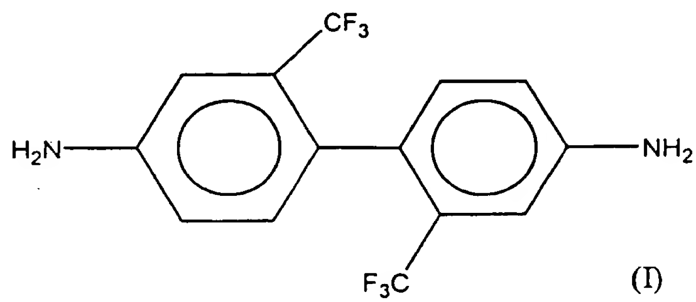
WE CLAIM:

1. An insulated integrated circuit comprising:

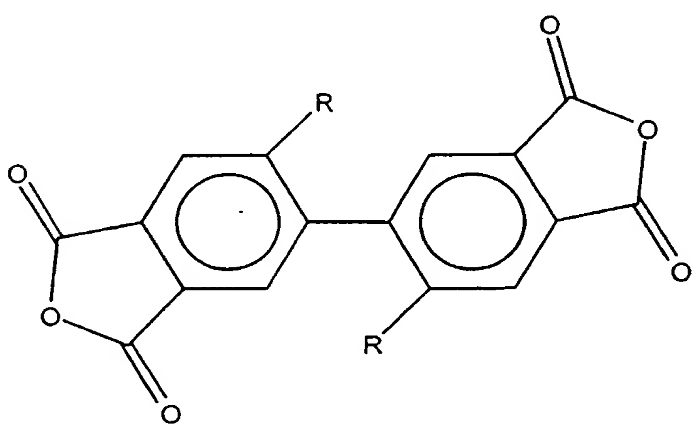
an integrated circuit; and

an insulating layer disposed on said integrated circuit, wherein said insulating layer is a polyimide film that is the polymerization product of polymerization product of an aromatic diamine having the general formula (I):



(I)

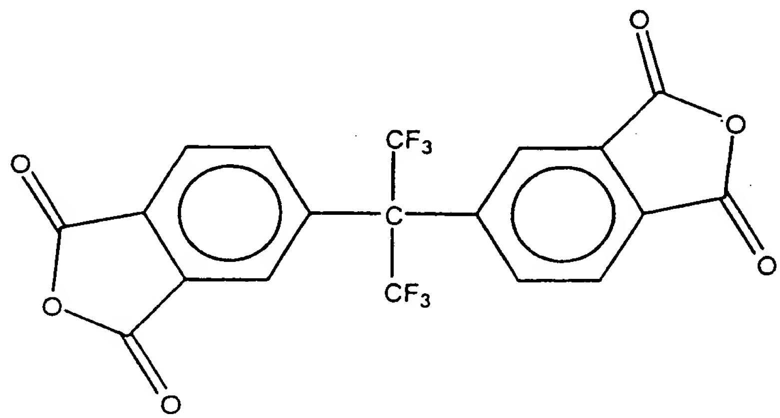
and an aromatic dianhydride having the formula (II):



(II)

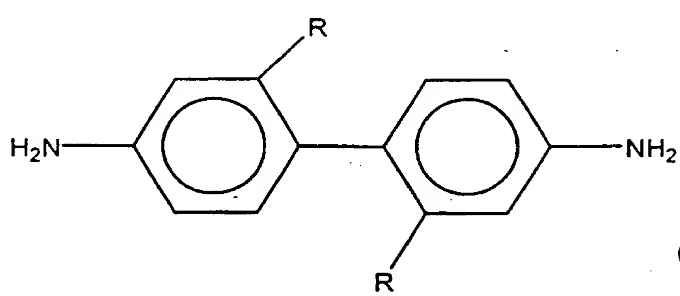
wherein R is an organic substituent selected from the group consisting of CF_3, *o*-trifluoromethyl phenyl, *m*-trifluoromethyl phenyl, *p*-trifluoromethyl phenyl and 3,5-bis[(*m*-trifluoromethyl) phenyl]; or

the polymerization product of an aromatic dianhydride having the general formula (III):



(III)

and an aromatic diamine having the formula (IV):



(IV)

wherein R is a substituent selected from the group consisting of trifluoromethyl, *o*-trifluoromethyl phenyl, *m*-trifluoromethyl phenyl, *p*-trifluoromethyl phenyl and 3,5'-bis[(*m*-trifluoromethyl) phenyl].

2. The insulated integrated circuit according to claim 1, wherein said integrated circuit is a microprocessor.

3. The insulated integrated circuit according to claim 1, wherein the thickness of said insulating layer is from about 10 to about 1000 microns.

4. The insulated integrated circuit according to claim 1, wherein the thickness of said insulating layer is from about 10 to about 500 microns.

5. The insulated integrated circuit according to claim 1, wherein the thickness of said insulating layer is from about 10 to about 100 microns.

6. The insulated integrated circuit according to claim 1, wherein the dielectric constant of said insulating layer is less than about 2.8.

7. The insulated integrated circuit according to claim 1, wherein the dielectric constant of said insulating layer is less than about 2.7.

8. The insulated integrated circuit according to claim 1, wherein the dielectric constant of said insulating layer is less than about 2.5.

9. The insulated integrated circuit according to claim 1, wherein the coefficient of thermal expansion is greater than about 23 x $10^{-6}/^{\circ}C$.

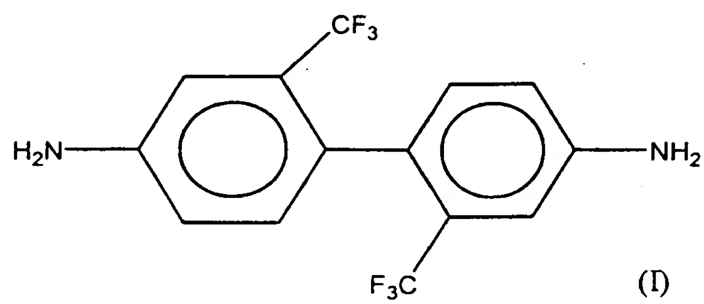
10. The insulated integrated circuit according to claim 1, wherein the coefficient of thermal expansion is greater than about 42 x $10^{-6}/^{\circ}C$.

11. The insulated integrated circuit according to claim 1, wherein the coefficient of thermal expansion is greater than about 50 x $10^{-6}/^{\circ}C$.

12. An insulated electrically conductive component comprising:

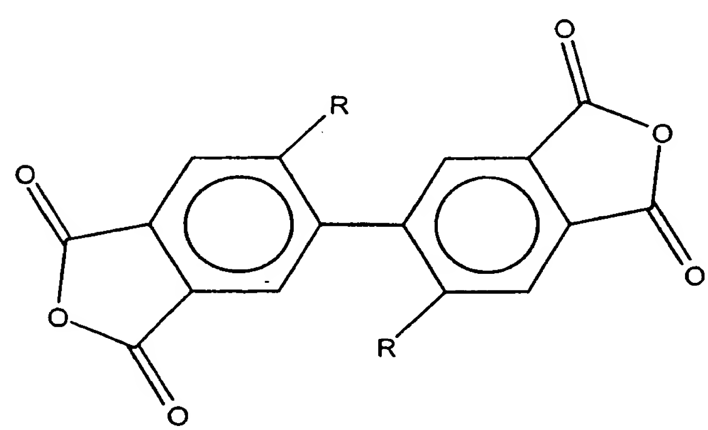
an electrically conductive component; and

an insulating layer comprising comprising the polymerization product of an aromatic diamine having the general formula (I):



(I)

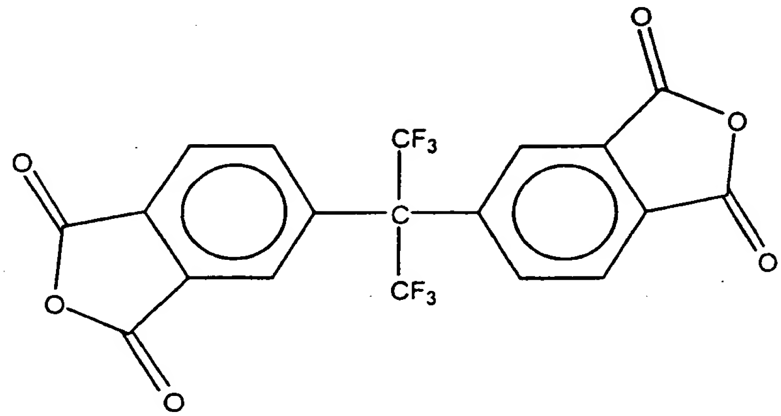
and an aromatic dianhydride having the formula (II):



(II)

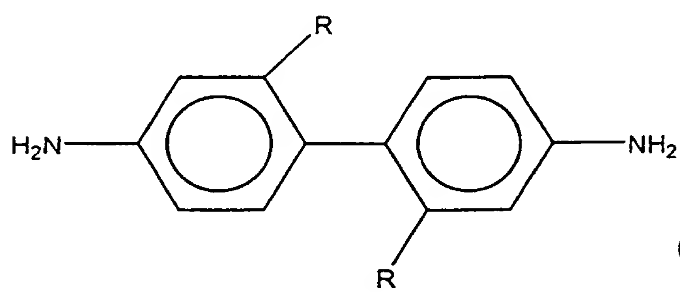
wherein R is an organic substituent selected from the group consisting of CF_3, *o*-trifluoromethyl phenyl, *m*-trifluoromethyl phenyl, *p*-trifluoromethyl phenyl and 3,5-bis[(*m*-trifluoromethyl) phenyl]; or

the polymerization product of an aromatic dianhydride having the general formula (III):



(III)

and an aromatic diamine having the formula (IV):



(IV)

wherein R is a substituent selected from the group consisting of trifluoromethyl, *o*-trifluoromethyl phenyl, *m*-trifluoromethyl phenyl, *p*-trifluoromethyl phenyl and 3,5'-bis[(*m*-trifluoromethyl) phenyl].

13. The insulated electrically conductive component according to claim 12, wherein said electrically conductive component is selected from the group consisting comprising capacitors, diodes, connectors and transistors.

14. The insulated electrically conductive component according to claim 12, wherein the thickness of said insulating layer is from about 10 to about 1000 microns.

15. The insulated electrically conductive component according to claim 12, wherein the thickness of said insulating layer is from about 10 to about 500microns.

16. The insulated electrically conductive component according to claim 12, wherein the thickness of said insulating layer is from about 10 to about 100 microns.

17. The insulated electrically conductive component according to claim 12, wherein the dielectric constant of said insulating layer is less than about 2.8.

18. The insulated electrically conductive component according to claim 12, wherein the dielectric constant of said insulating layer is less than about 2.7.

19. The insulated electrically conductive component according to claim 12, wherein the dielectric constant of said insulating layer is less than about 2.5.

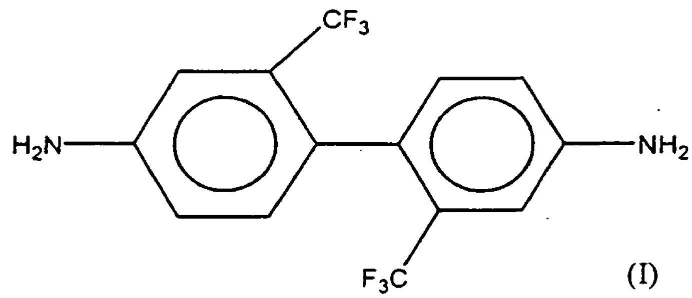
20. The insulated electrically conductive component according to claim 12, wherein the coefficient of thermal expansion is greater than about 23 x 10^{-6}/°C.

21. The insulated electrically conductive component according to claim 12, wherein the coefficient of thermal expansion is greater than about 42 x 10^{-6}/°C.

22. The insulated integrated circuit according to claim 1, wherein the coefficient of thermal expansion is greater than about 50 x 10^{-6}/°C.

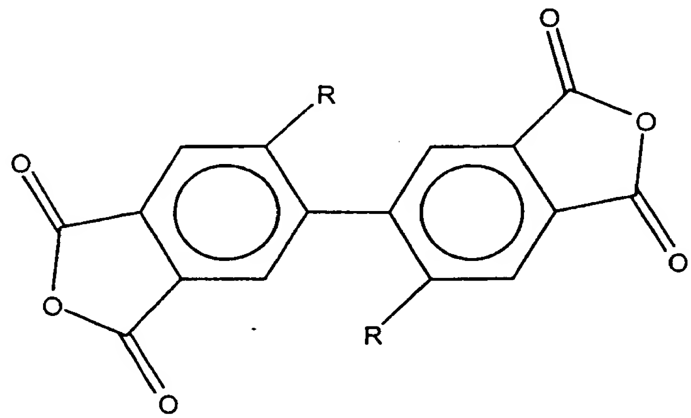
23. A method of coating an integrated circuit comprising the steps of:

preparing a polyimide comprising the polymerization product of an aromatic diamine having the general formula (I):



(I)

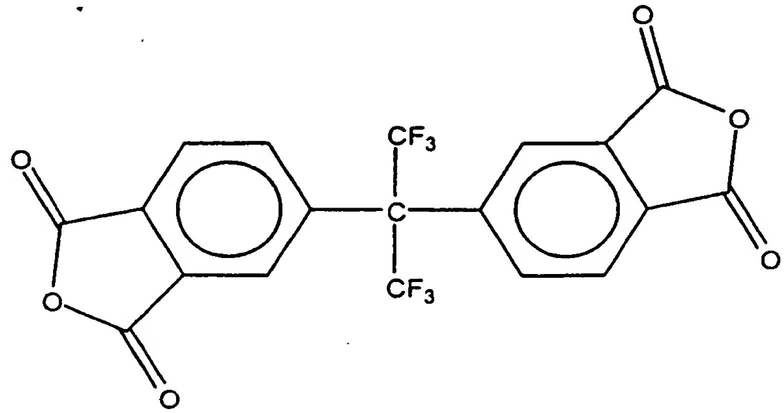
and an aromatic dianhydride having the formula (II):



(II)

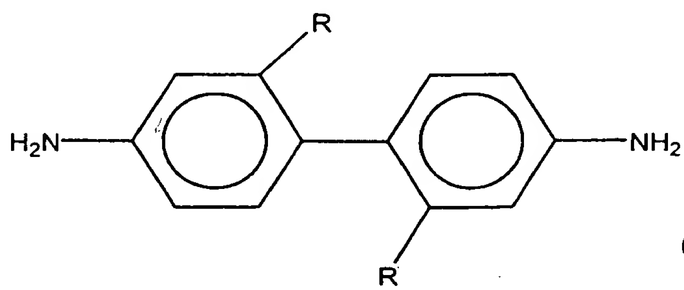
wherein R is an organic substituent selected from the group consisting of CF_3, *o*-trifluoromethyl phenyl, *m*-trifluoromethyl phenyl, *p*-trifluoromethyl phenyl and 3,5-bis[(*m*-trifluoromethyl) phenyl]; or

the polymerization product of an aromatic dianhydride having the general formula (III):



(III)

and an aromatic diamine having the formula (IV):



(IV)

wherein R is a substituent selected from the group consisting of trifluoromethyl, *o*-trifluoromethyl phenyl, *m*-trifluoromethyl phenyl, *p*-trifluoromethyl phenyl and 3,5'-bis[(*m*-trifluoromethyl) phenyl];

applying the polyimide dispersed within the organic solvent to the surface of the integrated circuit forming a thin insulating layer or film on the surface of the circuit; and

heating the integrated circuit with the insulating polyimide layer or film disposed thereon to a temperature sufficient to evaporate the organic solvent and to cure the polyimide.

24. The method according to claim 23, wherein the step of applying includes one of spraying, dipping, spin-coating, brush-coating and flow-coating.

25. The method according to claim 23, wherein the organic solvent is selected form the group consisting of acetone, cyclopentanone, tetrahydrofuran (THF), N,N'-dimethylacetamide (DMAc), N,N'-dimethylformamide (DMF), N-methylpyrrolidone (NMP) *p*-chlorophenol and *m*-cresol.